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Suicidal self-stabbing: A report of 12 cases from Crete, Greece

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Abstract

Sharp-force trauma is a popular cause of homicide and suicide in many countries. Characterisation of the injuries between the two is crucial for a differential diagnosis. The current paper reviews 12 self-inflicted sharp-force trauma deaths from the island of Crete in Greece. Forensic reports between 1999 and 2015 were collated, and we studied the number and location of injuries, the demographic characteristics of the deceased, the sharp object and the medical history of the deceased. One third of the cases where the forensic reports were available (3/10) involved multiple injuries, and one case involved a combination of stabbing and hanging. Most injuries involved a kitchen knife. Ninety-two per cent (11/12) of the victims involved male Greek nationals aged >50 years. The type and location of injuries were not found to be specific to suicide alone. Thus, death-scene investigation remains crucial to the differential diagnosis between suicide and homicide. This is the first report on self-inflicted sharp-force fatalities in Greece.

Keywords Suicides, sharp-force trauma, self-stabbing, knife, Greece, Crete

Introduction

Sharp-force trauma (SFT) is the most common cause of homicide in many European countries such as Sweden,[1,2] the United Kingdom[3,4] and Switzerland,[5] ranging from 27% to 37% of all cases, but is also common elsewhere in the world.[2,6] Stabbing injuries are vastly more common in homicides compared to suicides,[6–9] especially when multiple injuries are described.[7] Yet, several reports of suicidal incidents describe multiple wounds.[10–13] Thus, the recovery of a body bearing stabbing injuries requires special attention to determine the manner of death.

The majority of fatal SFT are unquestionably associated with homicides, regardless of context. Data from Texas presented in two retrospective studies[7,14] included >1000 SFT-related deaths. The first study in Dallas[14] reported that 90% were homicides as opposed to 7.5% which were suicides, while the second from Bexar County[7] noted a higher number of suicides (12.9%) in relation to homicides (83%). A smaller study in New York reported 84% homicidal SFT cases as opposed to 14% suicidal SFT cases.[15] A recent study from the Vermont Medical Examiner's office reported 36% of suicides and 86% of homicides due to SFT.[16] Self-stabbing also appears in Europe, with percentages of the total SFT fatalities reaching 17% in Germany[17] and 21% in Italy.[8] In a recent review article, DeGiorgio et al.[9] reported only 1.5–3% of SFT fatalities to be suicidal.

The thorax has been reported as the most popular target in homicides and the extremities in suicides.[7,8] Krywanczyk and Shapiro[16] found vertical stab wounds to the chest and head more frequently in homicides, and stab wounds to the wrists more frequently in suicides. An Italian study[8] reported 37% of suicides related to SFT, with the upper limbs (forearms) identified as the most common location of the injuries. A Japanese study[18] identified the abdomen as the most popular location of self-stabbing for males, and the neck as the most popular location for females. DeGiorgio et al.[9] reported the thorax as the most popular location for injuries in both suicides (36.2%) and homicides (54.1%). The same study confirmed that the injuries on the upper extremities are directly associated with suicides (24.4%) as opposed to homicides (0.1%).

The current study reports 12 stabbing suicides from Greece, more specifically from the island of Crete, for the first time. The aim of this paper is to provide descriptive information as to the circumstances of the incidents so that they can be used in similar cases where the manner of death is questionable. To the authors' knowledge, this is the first attempt to record suicidal stabbing incidents in Greece.

Material and Methods

Self-stabbing suicides in Crete between 1999 and 2015 were analysed. Archives of the Forensic Pathology Division Crete, Hellenic Republic Ministry of Justice and Human Rights, and the Department of Forensic Sciences of the University of Crete were reviewed by the lead author of this paper. The study was approved by the Research Council of the Faculty of Medicine at the University of Crete, Greece; the Department of the Ministry of Justice for the region of Crete; and the Public Prosecutor's Office. Ethical approval was given by the Ethics Committee of the Mental Health Institute in Chania, Crete, and the Ethics Committee of the School of History, Classics and Archaeology of the University of Edinburgh, UK (SHCA-REI-004).

Information such as the age and sex of the deceased, location (head, neck, thorax, abdomen, upper limbs and lower limbs) and number of the inflicted injuries, existence of hesitation marks, type of weapon, alcohol and toxicology screens was recorded. No statistical analysis was performed due to the small number of cases. Instead, a descriptive approach was adopted for the presentation of the results.

Results

A total of 12 cases of self-stabbing suicides were identified in Crete over a period of 17 years (1999–2015). Forensic reports were not available for two cases. Instead, the demographic information and cause and manner of death were retrieved from the death certificates. The suicide victims of these cases were male, aged 51 and 81 years old, respectively. Table 1 summarises all relevant information for the remaining 10 cases. Of the 12 cases, 11 involved males of Greek origin aged >50 years. Figure 1 shows a schematic representation of the injury locations (red) and hesitation marks (X) by self-cutting or -stabbing in each of 12 cases of suicide examined. Only one case of a female was recorded – that of a 38-year-old Eastern European woman. The most popular region for inflicted injuries was the neck (5/10 cases) followed by the thorax (3/10 cases). Figure 2 shows a stabbing injury to the chest, a penetrating injury to the heart and hesitation marks

on the wrists and left elbow (case 4). Two cases of self-stabbing to the abdomen were reported. Multiple injuries were noted in three cases. Case 6 involved 23 parallel injuries to the chest inflicted by a single-bladed knife, 8 cm long (Figure 3). The most common implement was a single-bladed non-serrated kitchen knife in the majority of the cases. Figure 4 illustrates three different blades used in three different suicide cases. Hesitation marks were recorded in three cases. For the two cases without forensic reports, information on the location and number of injuries or the exact type of weapon was not available. Blood alcohol was positive in 5/7 cases where such information was available, including one individual who had a history of heavy alcohol consumption. Blood alcohol ranged from 0.2 to 0.5 mg/L. One individual tested positive for benzodiazepines. Two individuals had a known mental disorder, and one was on antidepressants. Psychiatric evaluation was not available in all cases, but in most cases there were unofficial reports of a mental illness from family members and/or friends and neighbours.

Table 1. Summary of self-stabbing suicides in Crete between 1999 and 2015.

N	Sex	Age	Year	# of injuries	Location of injuries	Hesitation injuries	Weapon
1	Male	75	2000	1	Neck	NO	Knife
2	Male	51	2000	NA	NA	NA	Knife
3	Male	68	2001	1	Thorax (heart and lungs)	NO	Knife
4	Male	56	2005	8	Thorax (heart and lungs)	Left elbow, Left and Right wrist	Single-bladed knife
5	Male	81	2007	NA	NA	NA	Knife
6	Male	53	2008	23	Thorax (heart and lungs)	NO	Kitchen knife
7	Male	50	2011	3	Neck, abdomen	Neck	Single-bladed knife
8	Male	65	2012	1	Cubital fossa	NO	Homemade surgical blade
9	Male	61	2013	1	Neck	+Final hanging	Single-bladed knife
10	Male	87	2013	1	Abdomen	NO	Single-bladed knife
11	Male	61	2014	1	Neck	NO	Knife
12	Female	38	2014	31	Neck	8 Neck, 30 in thorax, 5 left wrist, 5 right wrist	Knife

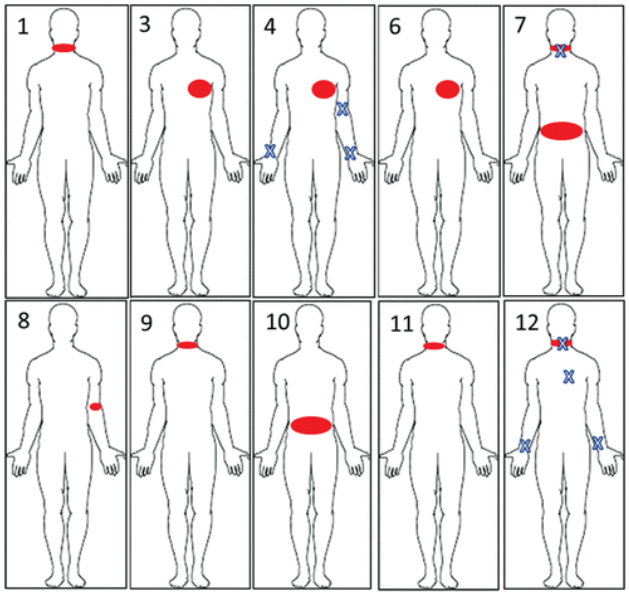

Figure 1. Schematic representation of the injury locations (red) and hesitation marks (X) by self-cutting or -stabbing in each of 12 cases of suicide examined.

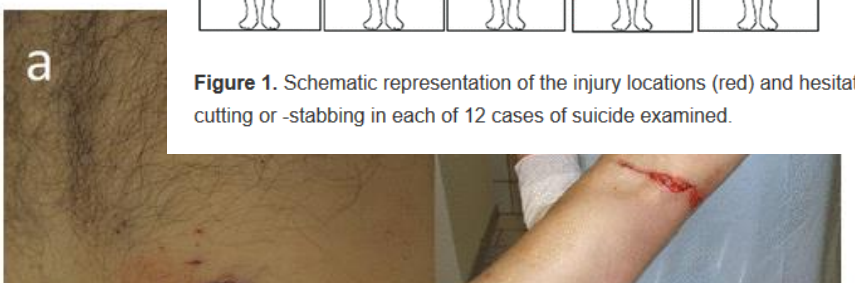

Figure 3. Multiple parallel stab wounds to the chest (case 6).

Discussion

Stabbing wounds are typically associated with homicides. However, cases of self-inflicted stabbing are not uncommon.[10–13,19] Suicidal sharp-force injuries can easily be interpreted as evidence of homicidal acts, especially in countries where such means of suicide are less common. Death-scene investigation is crucial for establishing manner of death in the absence of suicide notes and eye witnesses. In suicides, the direction of traumatic path may reveal the position of the sharp object and may point to the handedness of the person holding it. Suicide victims generally use their dominant hand to hold the weapon and often move their clothes away from the target area on their body.[20] The weapon is often a knife that can be found easily in their homes, such as a kitchen knife.[1] Atypical injuries may raise suspicions of foul play, as a homicide may be staged to look like a suicide. On the other hand, complex suicides that involve multiple attempts by different means would naturally prompt the authorities to investigate further. This makes differential diagnosis challenging for the pathologist, as current recommendations are to treat every fatal SFT death as a potential homicide until proven otherwise.[21]

Special attention should be given to the presence of hesitation marks; these are shallow cut marks directly associated with the fatal cut and are suggestive of suicide.[22,23] Hesitation marks represent a reluctance of the suicide victim to complete the suicidal act. They are generally found on the wrists and the neck, and tend to be found in multiples, of variable depth and parallel to the deepest cut.[22] It is worth noting that homicide victims may present cuts resembling hesitation marks, for example incised neck wounds, due to the victim's resistance to the assailant.[23] Right-handed suicide victims tend to inflict cuts that are deeper on the left side of the neck and trail off as they progress through the larynx towards the right side.[24] In contrast, homicidal cut marks on the neck may be variable depending of the relative position of the assailant and the victim.

In Crete, the most common means of suicide for males is the use of handguns or rifles, and for women it is the use of pesticides.[25–28] Only a handful of self-stabbing suicides were reported by the forensic services of Crete for the period 1999–2010, accounting for 1.2% of the total suicides.[28] The current study expands this period to 2015 and reports a total of 12 cases of self-inflicted SFT. No published cases from any other regions of Greece were found in the literature. A search in the archives of online newspapers resulted two other cases being found of Greek individuals who committed suicide by hara-kiri in the capital city of Athens. The first case was a 41-year-old man who stabbed himself three times in the stomach with a kitchen knife in his apartment in 2012. The second case was a 38-year-old man who was found stabbed five times in the abdomen and chest in the middle of a public park in 2015. The chest injury was ultimately fatal. The police initially

thought that this case was a homicide, but eventually it was proven to be a suicide. The knife recovered from the death scene belonged to the victim and only possessed his fingerprints and DNA. The victim was unemployed and suffered from psychiatric problems. In another region of Greece, Epirus, homicides were also investigated for a period of 15 years.[29] SFT accounted for 21% (12/58) of homicidal deaths and was the second most popular method of homicide in that region after firearms.

The number of cases reviewed here is too small to attempt any statistical comparison. Nevertheless, some observations can be made. First, of the 12 cases from Crete, only one female used stabbing as means to commit suicide. However, this individual was Eastern European, which brings the number of native Greek females to zero. The remaining cases and the two newspaper reports are all males. This agrees with other studies that cite males as predominantly using this method of suicide.[6,8,9,30] Conversely, sex distribution of SFT homicides is better balanced, ranging from a 2:8 (e.g. in Stockholm) to a 1:1 female to male ratio.[6] The Epirus study reported a 1:3 female to male ratio for SFT-related homicides.[29]

The most popular area of self-inflicted SFT for this study was the neck followed by the thorax. In a literature survey, DeGiorgio et al.[9] found the thorax to be the most popular region, while the neck came in fourth after upper extremities and the abdomen. It seems that reports in the literature are biased by several factors such as sample size, geographical and/or cultural factors, and therefore there is no good way to differentiate between homicides and suicides by SFT solely based on the location of the injuries. For example, in Japan, men prefer to commit suicide with sharp instruments in the abdomen (hara-kiri), while women choose the neck instead (jigai).[18,19] In Crete, as females predominantly use pesticides to commit suicide, this may imply that a female found with a slit throat is more likely to be a victim of homicide.

The classic criteria for differential diagnosis of SFT suicides include (a) several injuries on the site of self-infliction, (b) hesitation marks and (c) absence of injuries to the clothes.[30] Naturally, complex suicides including SFT raise suspicions of foul play. Yet, the literature reveals numerous suicide cases with an excessive number of injuries. Karger and Vennemann[31] and Rautji et al.[32] reported two cases of middle-aged-men who self-inflicted a total of 92 and 60 injuries, respectively. Our case 6 (Figure 3) also involved a 53-year-old man who committed suicide by inflicting 23 stabbing injuries to his chest without any hesitation marks. In fact, hesitation marks on different sites other than the fatal injury were recorded only in two cases, and clothes with evidence of sharp implement damage were recorded in only one case. These examples clearly indicate that the typical criteria for suicidal SFT injuries cannot always provide reliable information as to the manner of death. Careful death-scene examination is extremely valuable in such complex cases, especially if a suicide note is missing or was not written, and all circumstantial evidence, including medical history, police investigation, autopsy findings and toxicological reports, should be carefully considered to define the manner of death.

A systematic study of SFT suicides capturing the whole of Greece is imperative for accurate recording of characteristic injuries and creating a comprehensive profile of suicide victims. Psychological evaluation of these individuals would also allow us to investigate whether there is a connection between specific psychiatric disorders and the selection of SFT as a mean of suicide in Greek natives. A larger sample would allow us to determine the most popular target area of such

incidents and to analyse further the pattern of males predominately selecting SFT as a means of suicide.

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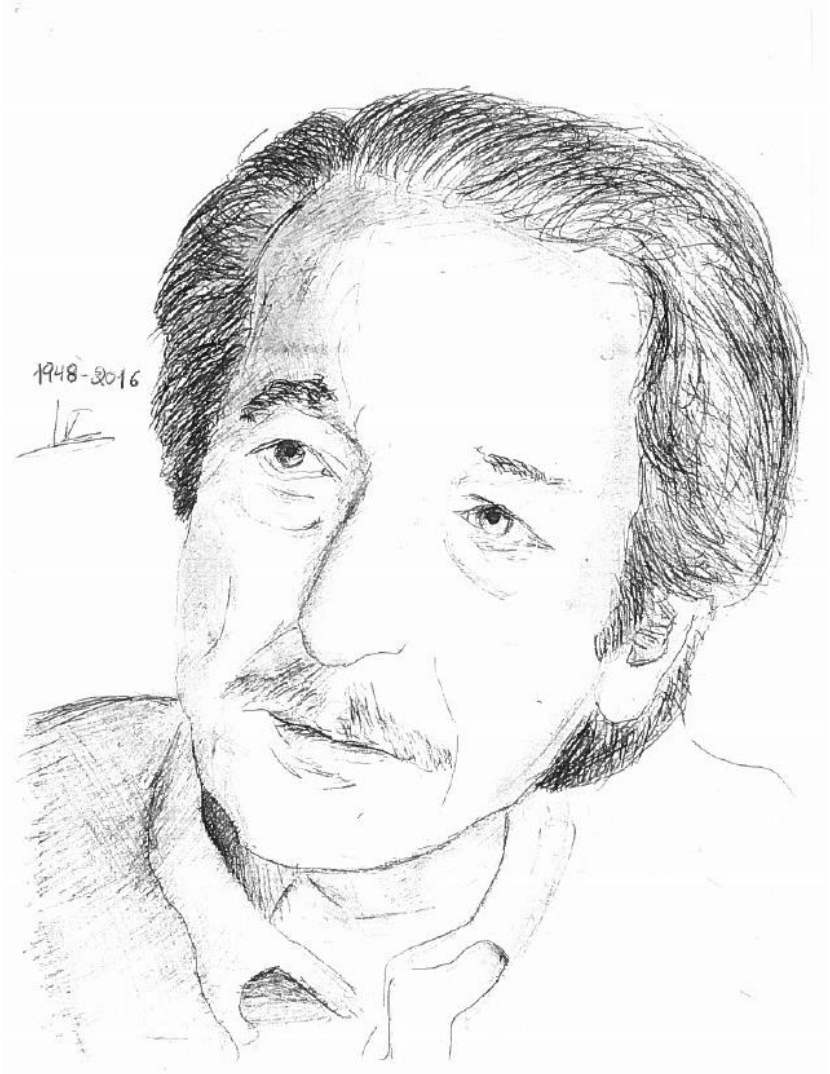

Professor Manolis Michalodimitrakis

Declaration of conflicting interests

The authors declare that they have no conflicts of interest.

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